

What are Ice Jams?

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A car located near the Yellowstone River near Glendive after an ice jam broke in March of 2003, and the actual “dam” of ice.

In the spring (and sometimes the late winter), ice jams occur when there is an accumulation of ice in a river or a stream that restricts water flow. Over the last two centuries, more ice jams have been recorded in Montana than in any other state. At least 18 deaths have been attributed to ice jams, which also is the highest in the nation.

For residents living near a river, ice jams can be damaging to property, especially if not protected by a dike or a levee. Agricultural damage due to ice jams has been particularly high in eastern Montana. In 1972, an ice jam flood on the Yellowstone River in Richland County put an estimated 2,500 acres of farmland under water (CRREL 1998). For Bob Heinle in eastern Rosebud County, the ice jam flood in 1994 was so rapid that he lost 60 cattle. “It was just so quick, so devastating,” the local rancher said. “It came in the night before in a matter of 5 to 10 minutes. ... We put the cattle where we thought it was high ground. It wasn’t high ground, as it turned out.” The estimated loss in the dead livestock was \$60,000.

Probably the most impressive ice jam in eastern Montana occurred on the Yellowstone River in Glendive in April of 1899. Twelve people lost their lives, numerous livestock drowned, many homes were washed away, and several spans of the Yellowstone River Bridge were destroyed during this event. It was reported that the river rose from 19 feet to 30 feet during this event within just two hours.

Ice jams typically occur when a period of sub-zero temperatures are followed by a quick thaw. In eastern Montana, March and April are by far the most common months for ice jams to occur. On the Yellowstone River, the portion upstream near the higher elevations can warm up quicker than the lower elevations. The result is a rush of water and ice headed downstream – where massive chunks of ice are still frozen in place. In the case of the Yellowstone River, which - unlike the Missouri – has been mostly untouched by man, bends in the river where ice can jam are plentiful.

The National Weather Service in Glasgow continually monitors the streams and rivers in northeast Montana. However, receiving information on ice jams is highly dependant upon river spotters. If you are interested in reporting this information to us, please contact Tanja Fransen at 1-406-228-2850 or email at tanja.fransen@noaa.gov to get more information on the NWS Ice Jam reporting web site.

The US Army Corps of Engineers has a web site that discusses ice jams. You can access it at: <http://www.crrel.usace.army.mil/icejams/index.htm>